

Amendments to the Claims:

Please cancel claims 1 and 9-30, and add claims 33-42 as shown in the following listing of claims. This listing of claims will replace all prior versions, and listings, of claims in the application.

1 Claims 1-30 (canceled).

1 31. (previously presented) An omni-directional image and 3-Dimensional data
2 acquisition apparatus, comprising:

3 a plurality of multi-camera modules, each multi-camera module
4 constructed in a manner comprising a plurality of cameras that are symmetrically
5 arranged with a specific point in a plane, each of the cameras taking charge of each of
6 divided angles such that each multi-camera module can take an omni-directional
7 continuous panoramic photograph of surrounding objects with the specific point;

8 first frame grabbers each of which is electrically connected to each of
9 the cameras of each multi-camera module, to grab photographed images by frames;

10 an exposure calculator electrically connected to the first frame
11 grabbers, to calculate exposure of each camera, based on the grabbed images by
12 frames;

13 an exposure signal generator electrically connected to each camera, to
14 transmit information about the exposure as a signal on the basis of the exposure
15 calculated by the exposure calculator;

16 storage means electrically connected to the each first frame grabber, to
17 store images photographed by the cameras according to photographing location and
18 photographing time;

19 a video camera electrically connected to the storage means via a
20 second frame grabber for grabbing photographed moving pictures by frames, to the
21 storage means a unique video clip corresponding to each image or image group to be
22 stored in the storage means;

23 a GPS sensor to sense the photographing location and photographing
24 time;
25 an annotation entering unit electrically connected to the GPS sensor to
26 calculate location and time corresponding to each frame based on sensed data of the
27 GPS sensor, the annotation entering unit being electrically connected to the storage
28 means to enter the calculated location and time in each frame as annotation; and
29 a trigger signal generator electrically connected the storage means, the
30 exposure signal generator, the annotation entering unit, the trigger signal generator
31 selectively transmits a trigger signal to the exposure signal generator or the annotation
32 entering unit in order that the cameras start to photograph the objects according to the
33 trigger signal; and wherein the multi-camera modules are vertically stacked and
34 formed in at least two layers in the direction of height.

1 32. (previously presented) An omni-directional image and 3-Dimensional data
2 acquisition apparatus, comprising:
3 a plurality of multi-camera modules, each multi-camera module
4 constructed in a manner comprising a plurality of cameras that are symmetrically
5 arranged with a specific point in a plane, each of the cameras taking charge of each of
6 divided angles such that each multi-camera module can take an omni-directional
7 continuous panoramic photograph of surrounding objects with the specific point;
8 first frame grabbers each of which is electrically connected to each of
9 the cameras of each multi-camera module, to grab photographed images by frames;
10 an exposure calculator electrically connected to the first frame
11 grabbers, to calculate exposure of each camera, based on the grabbed images by
12 frames;
13 an exposure signal generator electrically connected to each camera, to
14 transmit information about the exposure as a signal on the basis of the exposure
15 calculated by the exposure calculator;

16 storage means electrically connected to the each first frame grabber, to
17 store images photographed by the cameras according to photographing location and
18 photographing time;
19 a distance sensor and a direction sensor for respectively sensing the
20 distance and direction of the image photographed by each camera;
21 a GPS sensor to sense the photographing location and photographing
22 time;
23 an annotation entering unit electrically connected to the GPS sensor to
24 calculate location and time corresponding to each frame based on sensed data of the
25 GPS sensor, the annotation entering unit being electrically connected to the storage
26 means to enter the calculated location and time in each frame as annotation; and
27 a trigger signal generator electrically connected the storage means, the
28 exposure signal generator, the annotation entering unit, the trigger signal generator
29 selectively transmits a trigger signal to the exposure signal generator or the annotation
30 entering unit in order that the cameras start to photograph the objects according to the
31 trigger signal; and wherein the multi-camera modules are vertically stacked and
32 formed in at least two layers in the direction of height.

1 33. (new) The apparatus as claimed in claim 31, further comprising a plurality of
2 light intensity sensors electrically connected to the exposure calculator to allow the
3 exposure calculator to be able to calculate the exposure amount of each camera based
4 on external light intensity.

1 34. (new) The apparatus as claimed in claim 31, wherein the storage means is one
2 of digital storage devices comprised of a hard disk, compact disk, magnetic tape and
3 memory.

1 35. (new) The apparatus as claimed in claim 31, further comprising an audio
2 digital converter electrically connected to the storage means, the audio digital
3 converter converting an audio signal sensed by an audio sensor into a digital signal as
4 an audio clip to correspondingly attach to each image or image group to be stored in
5 the storage means.

1 36. (new) The apparatus as claimed in claim 31, further comprising mobile
2 means, on which the multi-camera modules are mounted, to enable continuous
3 panoramic photographing while moving.

1 37. (new) The apparatus as claimed in claim 31, further comprising a distance
2 sensor and a direction sensor for respectively sensing the distance and direction of the
3 image photographed by each camera.

1 38. (new) The apparatus as claimed in claim 32, further comprising a plurality of
2 light intensity sensors electrically connected to the exposure calculator to allow the
3 exposure calculator to be able to calculate the exposure amount of each camera based
4 on external light intensity.

1 39. (new) The apparatus as claimed in claim 32, wherein the storage means is one
2 of digital storage devices comprised of a hard disk, compact disk, magnetic tape and
3 memory.

1 40. (new) The apparatus as claimed in claim 32, further comprising an audio
2 digital converter electrically connected to the storage means, the audio digital
3 converter converting an audio signal sensed by an audio sensor into a digital signal as
4 an audio clip to correspondingly attach to each image or image group to be stored in
5 the storage means.

1 41. (new) The apparatus as claimed in claim 32, further comprising a video
2 camera electrically connected to the storage means via a second frame grabber for
3 grabbing photographed moving pictures by frames, to the storage means a unique
4 video clip corresponding to each image or image group to be stored in the storage
5 means.

1 42. (new) The apparatus as claimed in claim 32, further comprising mobile
2 means, on which the multi-camera modules are mounted, to enable continuous
3 panoramic photographing while moving.